

AMENDMENTS TO THE CLAIMS

Claims 1, 4-6, 9-12, 17, 20, 24, 26 and 27 are being amended, and claims 3 and 13-16 are being canceled. All pending claims are reproduced below, including those that remain unchanged.

1. (Currently Amended) A job management apparatus for use in a batch job execution system including a plurality of service providers in communication with the job management apparatus, the apparatus comprising:

a client communications part which receives a batch job from a client;

an extracting part which extracts a one or more task from the batch job; and,

an assigning part which receives a first request work signal from at least one each of the plurality of service providers, and that is available to perform work, each request work signal informing the assigning part of one or more function or service that the service provider can perform; in response to the first signal delegates the task to one of the plurality of service providers for performing the task

wherein the assigning part delegates each task to one of the service providers that can perform the function or service required to perform the task; and

wherein the assigning part sends an idle assignment signal to each service provider from which the request work signal is received but for which there is not a task available, the idle signal informing the service provider to not send further request work signals until the service provider receives a work available signal.

2. (Original): The job management apparatus of claim 1, wherein the plurality of service providers are operating on a plurality of machines.

3. (Canceled):

4. (Currently Amended): The job management apparatus of claim 1, further comprising at least one contact part which receives a ~~second~~ status report signal from the service providers, which updates the status of the task being performed by the service provider.

5. (Currently Amended): The job management apparatus of claim 4, wherein the ~~first~~ work request signal specifies a minimum frequency at which the ~~second~~ status report signal will be sent to the contact part.
6. (Currently Amended): The job management apparatus of claim 4, wherein the ~~second~~ status report signal informs the contact part of completion of the task.
7. (Original): The job management apparatus of claim 1, further being in communication with a job database which stores the batch job upon receipt from the client; and
the job database being regularly updated as jobs are executed by batch job execution system.
8. (Original): The job management apparatus of claim 7, further comprising a retrieving part which retrieves the batch job from the job database when the batch job is to be executed.
9. (Currently Amended): A batch job execution system for communicating with at least one client, comprising:
a job management apparatus in communication with the clients which receives a batch job from a client, extracts a task from the batch job, and assigns the task;
a job database in communication with the job management apparatus which stores the batch job;
a plurality of service providers in communication with the job management apparatus which receive the assigned task, perform the task, and return a result to the job management apparatus; and,
~~at least one provider manager~~ a plurality of provider managers, each in communication with the job management apparatus and in communication with a corresponding subset of the plurality of service providers which monitors the tasks being

performed on the service providers and provides status information to the job management apparatus.

10. (Currently Amended): The batch job execution system of claim 9, wherein ~~the~~ a ~~said~~ provider manager in response to a request to increase capacity from the job management apparatus assigns additional service providers to receive tasks from the job management apparatus.

11. (Currently Amended): The batch job execution system of claim 9, wherein if ~~the~~ a ~~said~~ service provider fails to complete ~~the~~ its assigned task within a predetermined time, the corresponding provider manager communicates with the service provider, and informs the job management apparatus of the task status in response to the communication with the service provider.

12. (Currently Amended): The batch job execution system of claim 9, wherein ~~the~~ a ~~said~~ provider manager informs the service provider performing the task to terminate performance of the task in response to a signal received from said job management apparatus.

13-16. (Canceled)

17. (Currently Amended) A computer implemented method for preparing and executing a batch job by a batch job execution system, comprising the steps of:

submitting a batch job with processing parameters to a job management apparatus;

storing the batch job in a job database;

receiving a first work request signal from ~~at least one~~ each of a plurality of service providers that is available to perform work, which informs each work request signal informing the job management apparatus of the service providers ability to perform a task one or more function or service that the service provider can perform;

determining whether the batch job execution system is able to process the batch job;

extracting at least one task from the batch job;

~~delegating the task to the service providers in response to the first signal;~~

~~performing the task delegated to the service provider;~~

~~completing the task; and,~~

~~returning a result from the service provider to the job management apparatus.~~

delegating each task to one of the service providers that can perform the function or service required to perform the task; and

sending an idle assignment signal to each service provider from which the request work signal is received but for which there is not a task available, the idle signal informing the service provider to not send further request work signals until the service provider receives a work available signal; and

sending a work available signal to each service provider that was previously sent the idle assignment signal but for which a task is available.

18. (Original): The method of claim 17, further comprising the step of retrieving the batch job from the batch job database prior to the step of extracting at least one task.

19. (Original): The method of claim 17, wherein the step of delegating further comprises delegating a plurality of tasks to the plurality of service providers to be performed in parallel.

20. (Currently Amended): The method of claim 17, wherein the step of performing, further includes receiving a ~~second~~ status report signal from the service provider performing the task which updates the status of the task being performed.

21. (Previously Presented): The method of claim 17, further comprising determining whether the batch job execution system is able to process the batch job; wherein the step of determining further includes assigning additional service providers to perform tasks

for the job management apparatus if it is determined that the batch job execution system is unable to process the job.

22. (Original): The method of claim 17, further comprising the steps of:
communicating with the service provider performing the task after a predetermined time;
informing the job management apparatus of the tasks status; and,
the job management apparatus determining whether to re-assign the task or wait for task completion in response to the step of updating the task status.

23. (Original): The method of claim 17, further comprising the step of terminating the step of performing the task in response to receiving a signal from the job management apparatus, prior to the step of completing the task.

24. (Currently Amended) An article of manufacture including an information storage medium wherein is stored information comprising;

a client communications software component which receives a batch job from a client;

an extracting software component which extracts a one or more task from the batch job; and,

an assigning software component which receives a first request work signal from at least one each of a plurality of service providers that is available to perform work, each request work signal informing the assigning part of the function or service that the service provider performs; and in response to the first signal delegates a task to one of the plurality of service providers for performing the task

wherein the assigning software component delegates each task to one of the service providers that can perform the function or service required to perform the task;
and

wherein the assigning software component sends an idle assignment signal to each service provider that sent a request work signal but for which there is not a task

available, the idle signal instructing the service provider to not send further request work signals until the service provider receives a work available signal.

25. (Original): The article of manufacture of claim 24, wherein the assigning software component monitors which service providers are able to perform a task.

26. (Currently Amended): The article of manufacture of claim 24, further comprising a contact software component which receives a ~~second~~ status report signal from the plurality of service providers which informs the contact software component of the status of the task being performed.

27. (Currently Amended): The article of manufacture of claim 26, wherein the ~~first work request~~ signal specifies a minimum frequency at which the ~~second~~ status report signal will be sent to the contact software component.

28. (Original): The article of manufacture of claim 24, further comprising a job database software component which stores the batch job upon receipt from the client, wherein the client communications software component is in communication with the job database software component.

29. (Original): The article of manufacture of claim 28, further comprising a retrieving software component which retrieves the batch job from the job database software component when the batch job is to be executed.

30. (Original): The article of manufacture of claim 24, further comprising at least one provider manager software component in communication with the plurality of service providers which monitors the tasks being performed on the service providers and provides status information to the job management software component.

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